Universal Waste (UW) Regulations – for Cathode Ray Tubes(CRTs) & CRT glass

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Overview

- * Regulatory changes in 2012 readopted in 2014
- * Treatment authorized for CRTs and CRT glass
- * Managing CRTs/CRT glass
- * Scenarios

Regulatory Changes

- * DTSC adopted emergency regulations in 2012 (re-adopted in 2014)
- * Why?
 - Decline in production of CRT manufacturing
 - Mismanagement of CRTs and CRT glass
- * What do they do?
 - Added new allowable disposition options including disposal and other types of recycling (other than CRT glass manufacturing and lead smelting)
 - Increased documentation requirements
 - * Attempted to identify and allow new/viable recycling options as ERMs
- * What they don't do:
 - Did not provide new reclamation options

Where Are The Rules?

- California Code of Regulations, Title 22, division 4.5, Chapter
 23 Universal Waste Rule
- * California Code of Regulations, Title 22, division 4.5, Chapter 11 (exclusion for CRT panel glass), Chapter 12 (Generator requirements), and Health and Safety Code, section 25143.2 (b) and (d) (Hazardous Waste Recycling Laws)
 - * Generator page: http://www.dtsc.ca.gov/HazardousWaste/Generators.cfm
 - * Generator chart: http://www.dtsc.ca.gov/HazardousWaste/upload/California-Generator-Chart.pdf

Treatment of CRTs and CRT Glass

- What is treatment of CRTs and/or CRT glass?
 - * A person who removes CRTs from CRT devices (e.g. a television) or removes yokes from CRTs (a.k.a. dismantlers or .72 recyclers); or
 - * A person who conducts treatment of CRTs by breaking the CRTs' glass (a.k.a. **CRT processors** or .73 recyclers)
- Only dismantlers & CRT processor are subject to CRT management requirements

Managing CRTs and CRT glass

How to **ensure** CRTs/CRT glass is recycled or disposed?

- * What is the end destination of <u>all of the CRT glass</u> (i.e., what are the disposition options)?
 - * Disposing of CRT/CRT glass:
 - * H.W. CRTs/CRT glass (Chapter 12)
 - Determine if CRT panel glass is excluded (Chapter 11)
 - * Recycling CRTs/CRT glass:
 - * by lead smelting or CRT glass manufacturing (UW -Article 7)
 - by means other than lead smelting or CRT glass manufacturing
 - * H.W. CRTs/CRT glass(Chapter 12)
 - * Determine if excluded recyclable material (ERM) (Health and Safety Code, section 25143.2)

Exception to "Ensure"

A dismantler that sends its CRTs to California (CA) CRT processor may:

 Manage the CRTs as UW without any additional documentation (i.e., they do not need to "ensure" CRTs are recycled or disposed)

A dismantler/CRT processor that sends CRTs/CRT glass to be reclaimed through CRT glass manufacturing/lead smelting must have all the following information:

- * If sending directly use any shipping document including a bill of lading showing CRTs were received
- CRTs/CRT glass may continue to be managed as UW if these conditions are met
- A dismantler/CRT processor that cannot produce this information must manage the CRTs/CRT glass as fully regulated HW

A dismantler/CRT processor that sends CRTs/CRT glass to be reclaimed through CRT glass manufacturing/lead smelting and uses an intermediate facility

- * What is an "intermediate facility"?
- "... a facility that manages CRTs and/or CRT glass pursuant to article 3 of this chapter or 40 Code of Federal Regulations section 261.4(a)(22), or as a destination facility or at a foreign destination."

A dismantler/processor that uses an intermediate facility prior to its CRTs/CRT glass going to a CRT glass manufacturer or lead smelter must have all the following:

- * A contractual arrangement
- * Bill of ladings showing the CRTs were accepted by the intermediate
- * Bill of lading showing the CRT glass was sent to and received by a CRT glass manufacturer or lead smelter, including name and address
- CRTs/CRT glass may continue to be managed as UW if these conditions are met
- A dismantler/CRT processor that cannot produce this information must manage the CRTs/CRT glass as fully regulated HW
- the dismantler/CRT processor, not the intermediate facility must ensure its CRTs/CRT glass is recycled (at an identified lead smelter or CRT glass manufacturer) as UW

A dismantler/CRT processor that sends CRTs/CRT glass to be recycled by other means

- Dismantler/CRT processor is deemed the generator of HW CRTs/CRT glass at the point this decision is made
- * Dismantler/CRT processor may decide to do one of the following:
 - * Continue to manage those CRTs/CRT glass as fully regulated HW; or
 - Determine if they are excluded from HW regulations as an excluded recyclable material (ERM)

ERM Documentation Requirements

- * At a minimum, a dismantler or CRT processor would need to have the following information to demonstrate compliance:
 - * Info showing the CRTs/CRT glass is used or reused as an ingredient or as a substitute for a commercial product
 - * Info showing the CRTs/CRT glass is safe for use or reuse
 - Info about the products produced from the CRTs/CRT glass
 - * Info showing the ERM was received and made into products that were sold
- Notify DTSC

ERM Management

A dismantler/CRT processor that determines their CRTs/CRT glass qualifies as an ERM must do all the following:

- * Label as "Excluded Recyclable Material"
- * Follow export requirements, when applicable
- * Maintain records (e.g., there is known market, products are being produced in an industrial process, the name and address of the recycler)
- A dismantler/CRT processor that cannot make this determination must manage the CRTs/CRT glass as fully regulated HW

ERM Prohibitions

- * "CRTs or CRT glass used in a manner constituting disposal" is prohibited
- * Reclamation with limited exceptions

Use, Reuse, or Reclamation

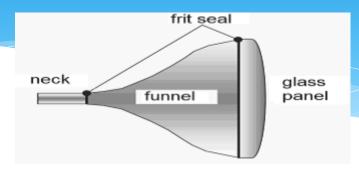
- * <u>Dismantlers</u> that do not send or ship CRTs to a CA CRT processor but send as for use or reuse:
 - * CRT is a non-RCRA HW (i.e., its excluded under CRT rule)
 - * Determine if the (d)(5) or (d)(6) use or reuse exclusion applies, which allows certain reclamation activities (i.e., filtering, screening, sorting, sieving, grinding, physical separation without the use of heat or chemicals)
- * <u>CRT processors</u> that send their CRT glass for use or reuse (CRT glass is RCRA HW) In this case US EPA has clarified the CRT rule no longer applies
 - Use the (b)(1) or (b)(2) use or reuse exclusion, no reclamation allowed, but certain activities may be considered incidental processing (IP) by EPA

Ensuring CRTs/CRT Glass is Disposed

A dismantler/CRT processor that sends CRTs/CRT glass **to be disposed**

- * Dismantler/CRT processor is deemed the generator of HW CRTs/CRT glass at the point this decision is made
- * Dismantler/CRT processor may decide to do one of the following:
 - * Continue to manage those CRTs/CRT glass as fully regulated HW; or
 - Determine if they are excluded from HW regulations as excluded hazardous waste CRT panel glass

Disposal of CRT Panel Glass



- * To dispose of CRT panel glass in a class II or III landfills:
 - Follow the treatment methods in Chapter 23
 - Ensure CRT funnel glass and CRT panel glass are not commingled
 - Only CRT processors may dispose of CRT panel glass in this manner
 - Remove the phosphor powders from the panel glass

Disposal of CRT Panel Glass

- Test CRT panel glass using waste criteria
- * Notify DTSC (Department of Toxic Substances Control, Universal Waste Notification and Reporting Staff, P.O. Box 806, Sacramento, CA 95812-0806, with the words "Attention: Universal Waste Handling Activities" prominently displayed on the front of the envelope)
- * If the CRT panel glass meets the waste it may be sent to a class II or III landfill as "Excluded Hazardous Waste CRT panel glass"

Disposal of CRT Panel Glass (con't)

- * Transporter must possess a Notification/Certification to provide to the landfill operator
 - * "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to generate CRT panel glass that meets the criteria specified in section 66273.81 without impermissible dilution. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- If the CRT processor determines the CRT panel glass does not meet the criteria the CRT panel glass may be disposed of fully regulated HW

- Scenarios cover "how a handler is regulated" under the DTSC regulations
- * The dismantler/CRT processor must be able to demonstrate to DTSC that they are compliant (or authorized under Chapter 23)
 - * To be discussed in the following slides

Sending CRTs/CRT Glass as UW or ERM

- * The information must ensure (or demonstrate) that the CRTs/CRT glass was recycled
 - * at a CRT glass manufacturer or a lead smelter or
 - * Meets the conditions to be excluded as hazardous waste when "used or reused"
- * Must be evaluated prior to each shipment
 - * The process is as important as the required information
- Not always meant to track the glass batch by batch
- Must show that the glass is moving to its end destinations

Why is the Process Important?

- * What if the intermediate facility claims business confidentiality?
- * What if the intermediate want to start recycling some of the CRT glass by means other than smelting/CRT glass manufacturing?
- * What if the intermediate facility sends to multiple end-destinations based on market conditions?
- * What if the intermediate facility can only supply the confirmation receipts on a quarterly basis?

Contractual Arrangement

* What is a "contractual arrangement"?

- Not defined (in regulation)
- DTSC will consider any legally binding agreement between an e-waste recycler and an intermediate facility to be a contractual arrangement
- * However, DTSC will not review contractual arrangements to determine if the specific provisions <u>will</u> operate to ensure that the CRTs/CRT glass are recycled as required or
- * that the intermediate facility <u>will</u> provide the e-waste recycler with the information it needs to demonstrate to DTSC that its CRTs/CRT glass were actually recycled

* A CRT handler in CA learns of an operation in CA that accepts whole (bare) CRT tubes, yoke removed. This downstream operation states that they process CRT tubes and prepare the glass for "subsequent markets". The CA CRT handler would like to send intact bare tubes to the downstream CA operator.

* Answer:

* The CA CRT handler may send the whole CRT tubes to the operation in CA as universal waste under a bill of lading.

* A CRT handler in CA learns of an out-of-state operation that accepts whole (bare) CRT tubes, yokes removed. This downstream operation states that they process CRT tubes and prepare the glass for "subsequent markets". The CA CRT handler would like to send intact bare tubes to the downstream CA operator.

* Answer:

- * A CA CRT handler should not send whole CRT tubes outof-state as universal waste or excluded recyclable material (ERM) if the ultimate disposition of the glass has not been identified or risk being in violation of DTSC rules.
- * A CA CRT handler must manage such tubes a fully regulated HW (i.e., send the tubes that facility using a manifest and registered HW transporter)

* A CRT handler in CA learns of an out-of-state operation that accepts whole (bare) CRT tubes, yokes removed. This downstream operation states that they separate and sort CRT glass. Panel glass is cleaned in a coating removal system and will be used to "manufacture new glass products." The funnel glass is "prepared for lead extraction" through a process that sounds a lot like secondary lead smelting. The CA CRT handler would like to send intact bare tubes to the downstream operator.

* Answer:

- For the recycling of the CRT panel glass, the CA CRT handler should request additional information from the operation prior to shipping any CRTs to them, <u>specifically about</u> the process and the use of the CRT panel glass
- * For the leaded glass, the CA CRT handler should ask the operation if their lead extraction process is considered lead smelting (e.g., get confirmation from the agency administering the RCRA H.W. program in that state).
- * A CA handler should do this prior to shipping each batch of CRTs and require the operation or subsequent recyclers notify them in advance if the recycling changes
- * If above information is not obtained, at a minimum, the CA CRT handler should not send the CRTs to the operation as UW or ERM or risk being in violation of DTSC rules.
- * The CA handler must manage the CRTs as fully regulated HW

* A CRT handler in CA learns of an out-of-state operation that accepts whole (bare) CRT tubes, yokes removed. The operation states that they prepare the CRTs to be feedstock to a lead extraction process that sounds a lot like secondary smelting. However there is no detail provided on whether the panel glass is used in this process or destined for another fate. The CA CRT handler would like to send intact bare tubes to the operator.

* Answer:

- * A CRT handler should not send whole CRT tubes out-ofstate if the disposition option for all the glass, including the CRT panel glass has not been identified by the operation or risk being in violation of DTSC rules.
- A CRT handler must manage the CRT tubes as fully regulated HW

* A CRT handler in CA separates, sorts, and cleans the coatings off CRT glass at their own facility. The leaded portion is sent to a secondary smelter. The CA recycler would like to send the non-leaded (TTLC tested <30,000mg/kg lead) glass to a disposal facility out of state.

* Answer:

* The CA CRT handler may only dispose of non-leaded glass (i.e., CRT panel glass that qualifies for the exclusion in 66261.4) in a class II or III landfill in California.

Finalizing Emergency Regulations

- DTSC intends to finalize the emergency regulations in September
- * Please submit all comments, concerns, questions, etc. regarding these regulations to:

crt_regs@dtsc.ca.gov

Questions?

Contact:

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